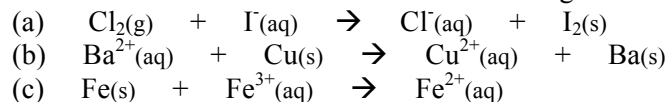


Voltaic Cells and Reduction Potential Problems

A voltaic cell is constructed that has one electrode compartment consisting of an aluminum strip and a 1.0 *M* solution of $\text{Al}(\text{NO}_3)_3$. The other compartment has a nickel strip placed in a solution of NiSO_4 . Using the table of standard reduction potentials (SRP), **(a)** write the overall reaction taking place in the cell. **(b)** What is being oxidized, and what is being reduced? **(c)** Write the half-reactions occurring in each compartment. **(d)** Which electrode is the cathode, which is the anode? **(e)** Indicate the charges of each electrode. **(f)** In which direction do the electrons flow? **(g)** In which directions do the ions flow through the salt bridge? **(h)** Write the line notation for this cell.

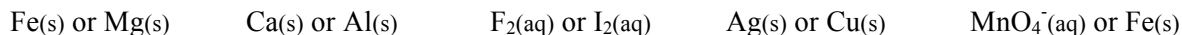
Using SRPs calculate the standard emf for each of the following reactions.



Use SRPs to determine which is the stronger oxidizing agent.



Use SRPs to determine which is the stronger reducing agent.



Sketch and describe the voltaic cell that takes place for the following reaction:

